



#3/A
TLR
PATENT
107-945 8/14/01

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re Application of:
Carmen Tawil, et al.

Serial No.: 09/714,011

Group Art Unit: 2611

Filed: November 16, 2000

Examiner: Unknown

FOR: APPARATUS AND METHOD FOR
TRANSMITTING TERRESTRIAL SIGNALS
ON A COMMON FREQUENCY WITH
SATELLITE TRANSMISSIONS

Commissioner for Patents
Washington, D.C. 20231

RECEIVED

JUN 11 2001

PRELIMINARY AMENDMENT OF CLAIMS Technology Center 2600

Please enter the following amendments to the claims pursuant to 37 C.F.R. §1.115.

A. Enter the following amended claims. Exhibit A enclosed herewith includes a marked up copy of each amended claim pursuant to 37 C.F.R. §1.121(c)(1)(ii).

1. (Amended) An apparatus for simultaneously transmitting terrestrial signals on a common frequency with satellite signals transmitted from a satellite, the satellite transmitting satellite signals at a first frequency to a user location for reception within a satellite directional reception range about the user location, the apparatus comprising:

(a) a terrestrial transmitter for transmitting terrestrial signals at the first frequency, the terrestrial transmitter being located with respect to the user location such

06/07/2001 SHINASS1 00000009 09714011

01 FC:202
02 FC:203

120.00 OP
126.00 OP

1 that the terrestrial transmitter transmits to the user location along a route which
2 is outside of the satellite directional reception range.

3
4 2. (Amended) The apparatus of Claim 1 wherein satellite signals are transmitted from a
5 plurality of satellites in geosynchronous orbit, each satellite separated from each other
6 satellite in a geosynchronous arc by an angle greater than one half of the satellite
7 directional reception range and the satellites together transmit satellite signals to the
8 user location within a combined satellite signal transmission range about the user
9 location, and wherein:

10 (a) the terrestrial transmitter transmits only in directions which are outside of the
11 combined satellite signal transmission range and an angle equal to one half of
12 the satellite directional reception range outside of the boundaries of the
13 combined satellite signal transmission range.

14
15 3. (Amended) The apparatus of Claim 2 further comprising:

16 (a) a plurality of terrestrial transmitters, each transmitting signals at the first
17 frequency from a different terrestrial transmission location.

18
19 7. (Amended) A method for simultaneously providing terrestrial signals on a common
20 frequency with satellite signals transmitted from a satellite, where the satellite is
21 transmitting at a first frequency along a satellite transmission axis extending from the
22 satellite to a terrestrial user location, the method comprising the steps of:

1 (a) transmitting terrestrial signals at the first frequency from a terrestrial
2 transmitter, the terrestrial transmitter being located with respect to the user
3 location so as to transmit to the user location along a transmission route which is
4 outside of a satellite directional reception range about the user location, wherein
the satellite directional reception range comprises a limited directional range
encompassing the satellite transmission axis.

7
8 8. (Amended) The method of Claim 7 further comprising the step of:

9 (a) transmitting terrestrial signals at the first frequency from a plurality of terrestrial
10 transmitters at different terrestrial locations.

11
12 12. (Amended) An apparatus for facilitating the use of terrestrial transmitted signals which
13 are transmitted on a common frequency simultaneously with satellite signals transmitted
14 from a satellite, the satellite transmitting satellite signals at a first frequency to a
15 terrestrial user location along a satellite transmission axis, the apparatus comprising:

16 (a) a terrestrial transmitter for transmitting terrestrial signals at the first frequency
17 to the user location, the terrestrial transmitter being located with respect to the
18 user location such that the terrestrial transmitter transmits to the user location
19 along a route which is outside of a satellite directional reception range about the
20 user location, wherein the satellite directional reception range comprises a
21 limited directional range encompassing the satellite transmission axis; and

1 (b) a terrestrial receiving antenna at the user location for receiving signals at the
2 first frequency only within a limited terrestrial directional reception range about
3 the terrestrial antenna, the terrestrial antenna being aligned so that the terrestrial
4 directional reception range encompasses the route from the terrestrial transmitter
5 location to the user location, and being aligned so that the satellite transmission
6 axis is outside of the terrestrial directional reception range.
7

8 13. (Amended) The apparatus of Claim 12 wherein satellite signals are transmitted from a
9 plurality of satellites in geosynchronous orbit, each satellite separated from each other
10 satellite in a geosynchronous arc by an angle greater than an angle equal to one half of
11 the satellite directional reception range and the satellites together transmit satellite
12 signals to the user location within a combined satellite signal transmission range about
13 the user location, and wherein:

14 (a) the terrestrial transmitter transmits only in directions which are outside of the
15 combined satellite signal transmission range and an angle equal to one half of
16 the satellite directional reception range outside of the boundaries of the
17 combined satellite signal transmission range.
18

19 14. (Amended) The apparatus of Claim 13 further comprising:

20 (a) a plurality of terrestrial transmitters each transmitting from a different terrestrial
21 transmission location.
22

1 18. (Amended) An apparatus for simultaneously transmitting terrestrial signals on a
2 common frequency with satellite signals transmitted from a satellite, the satellite
3 transmitting satellite signals at a first frequency to a user location for reception within a
4 satellite directional reception range about the user location, the apparatus comprising:
5 (a) a terrestrial transmitter for transmitting terrestrial signals at the first frequency
6 from a fixed terrestrial location which forms a fixed geometry with the user
7 location and the satellite, the terrestrial transmitter being located with respect to
8 the user location such that the terrestrial transmitter transmits to the user
9 location along a route which is outside of the satellite directional reception range
10 about the user location.

11
12 19. (Amended) The apparatus of Claim 18 wherein satellite signals are transmitted from a
13 plurality of satellites in geosynchronous orbit, each satellite separated from each other
14 satellite in a geosynchronous arc by an angle greater than one half of the satellite
15 directional reception range and the satellites together transmit satellite signals to the
16 user location within a combined satellite signal transmission range about the user
17 location, and wherein:

18 (a) the terrestrial transmitter transmits only in directions which are outside of the
19 combined satellite signal transmission range and an angle equal to one half of
20 the satellite directional reception range outside of the boundaries of the
21 combined satellite signal transmission range.
22

1 B. Add the following new claims pursuant to 37 C.F.R. §1.121(c)(1)(i).

2
3 24. (New) An apparatus for simultaneously broadcasting terrestrial signals to a first
4 terrestrial broadcast service area on a common frequency with satellite signals
5 transmitted from a satellite, the satellite transmitting satellite signals at a first frequency
6 to a number of user locations within the first terrestrial broadcast service area for
7 reception within a satellite directional reception range about each respective user
8 location, the apparatus comprising:

9 (a) a terrestrial transmitter for broadcasting terrestrial signals at the first frequency
10 to the first terrestrial broadcast service area, the terrestrial transmitter being
11 located with respect to each respective user location in the first terrestrial
12 broadcast service area such that the terrestrial transmitter broadcasts to the
13 respective user location along a route which is outside of the satellite directional
14 reception range about the respective user location.
15

16 25. (New) The apparatus of Claim 24 wherein the satellite signals are transmitted in a
17 digital format.
18

19 26. (New) The apparatus of Claim 24 wherein the route along which the terrestrial
20 transmitter broadcasts to each respective user location is at a terrestrial reception
21 elevation with respect to the respective user location which is above or below the

1 elevation of each direction within the satellite directional reception range about the
2 respective user location.

3
4 27. (New) The apparatus of Claim 24 wherein satellite signals are transmitted from a
5 plurality of satellites in geosynchronous orbit, each satellite separated from each other
6 satellite in a geosynchronous arc by an angle greater than one half of the satellite
7 directional reception range and the satellites together transmit satellite signals to each
8 user location in the first terrestrial broadcast service area within a combined satellite
9 signal transmission range about each respective user location, and wherein:

10 (a) the terrestrial transmitter broadcasts only in directions which are outside of the
11 combined satellite signal transmission range and an angle equal to one half of
12 the satellite directional reception range outside of the boundaries of the
13 combined satellite signal transmission range at each respective user location.

14
15 28. (New) The apparatus of Claim 27 wherein the satellite is transmitting at the first
16 frequency along a number of additional satellite transmission axes each extending from
17 the satellite to one of a number of additional terrestrial user locations within a combined
18 terrestrial broadcast service area which includes the first terrestrial broadcast service
19 area, and further comprising:

20 (a) a plurality of additional terrestrial transmitters, each broadcasting signals at the
21 first frequency from a different terrestrial broadcasting location to a portion of
22 the combined terrestrial broadcast service area, each additional terrestrial

transmitter being located with respect to each respective user location in the respective portion of the combined terrestrial broadcast service area to which the respective additional transmitter broadcasts such that the respective additional terrestrial transmitter broadcasts to the respective user location along a route which is outside of the satellite directional reception range about the respective user location.

29. (New) A method for simultaneously broadcasting terrestrial signals on a common frequency with satellite signals transmitted from a satellite, where the satellite is transmitting at a first frequency along a satellite transmission axis extending from the satellite to a number of terrestrial user locations within a first terrestrial broadcast service area, the method comprising the steps of:

(a) broadcasting terrestrial signals at the first frequency from a terrestrial transmitter to the first terrestrial broadcast service area, the terrestrial transmitter being located with respect to each respective user location so as to broadcast to the respective user location along a transmission route which is outside of a satellite directional reception range about the respective user location, wherein the satellite directional reception range comprises a limited directional range encompassing the satellite transmission axis.

30. (New) The method of Claim 29 wherein the satellite signals are transmitted in a digital format.

1 31. (New) The method of Claim 29 wherein the route along which the terrestrial transmitter
2 broadcasts to each respective user location is at a terrestrial reception elevation with
3 respect to the respective user location which is above or below the elevation of each
4 direction within the satellite directional reception range about the respective user
5 location.

6
7 32. (New) The method of Claim 29 wherein the satellite is transmitting at the first
8 frequency along a number of additional satellite transmission axes each extending from
9 the satellite to one of a number of additional terrestrial user locations within a combined
10 terrestrial broadcast service area which includes the first terrestrial broadcast service
area, and further comprising the step of:

11
12 (a) broadcasting terrestrial signals at the first frequency to the combined terrestrial
13 broadcast service area from a plurality of additional terrestrial transmitters at
14 different terrestrial locations, each additional terrestrial transmitter broadcasting
15 to a respective portion of the combined terrestrial broadcast service area and
16 being located with respect to each respective user location in that respective
17 portion of the combined terrestrial broadcast service area so as to broadcast to
18 the respective user location along a transmission route which is outside of the
19 satellite directional reception range about the respective user location.

20
21 33. (New) An apparatus for simultaneously broadcasting terrestrial signals on a common
22 frequency with satellite signals transmitted from a satellite, the satellite transmitting

1 satellite signals at a first frequency to a number of user locations in a first terrestrial
2 broadcast service area for reception within a satellite directional reception range about
3 each respective user location, the apparatus comprising:

4 (a) a terrestrial transmitter for broadcasting terrestrial signals to the first terrestrial
5 broadcast service area at the first frequency from a fixed terrestrial location
6 which forms a fixed geometry with each respective user location and the
7 satellite, the terrestrial transmitter being located with respect to each respective
8 user location such that the terrestrial transmitter broadcasts to the respective
9 user location along a route which is outside of the satellite directional reception
10 range about the respective user location.

12 34. (New)The apparatus of Claim 33 wherein the satellite signals are transmitted in a digital
13 format.

14
15 35. (New) The apparatus of Claim 33 wherein the route along which the terrestrial
16 transmitter broadcasts to each respective user location is at a terrestrial reception
17 elevation with respect to the respective user location which is above or below the
18 elevation of each direction within the satellite directional reception range about the
19 respective user location.

20
21 36. (New) The apparatus of Claim 33 wherein satellite signals are transmitted from a
22 plurality of satellites in geosynchronous orbit, each satellite separated from each other

1 satellite in a geosynchronous arc by an angle greater than one half of the satellite
2 directional reception range and the satellites together transmit satellite signals to each
3 respective user location within a combined satellite signal transmission range about the
4 respective user location, and wherein:

- 5 (a) the terrestrial transmitter broadcasts only in directions which are outside of the
6 combined satellite signal transmission range and an angle equal to one half of
7 the satellite directional reception range outside of the boundaries of the
8 combined satellite signal transmission range at the respective user location.

9
10 37. (New) The apparatus of Claim 36 wherein the satellite is transmitting at the first
11 frequency along a number of additional satellite transmission axes each extending from
12 AS only the satellite to one of a number of additional terrestrial user locations within a combined
13 terrestrial broadcast service area which includes the first terrestrial broadcast service
14 area, and further comprising:

- 15 (a) a plurality of additional terrestrial transmitters, each broadcasting to a portion of
16 the combined terrestrial broadcast service area from a different fixed terrestrial
17 transmission location which forms a fixed geometry with the satellite and each
18 respective user location in the respective portion of the combined terrestrial
19 broadcast service area, each additional terrestrial transmitter being located with
20 respect to each respective user location to which the respective additional
21 terrestrial transmitter broadcasts such that the respective additional terrestrial
22 transmitter broadcasts to the respective user location along a route which is